

## AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions and listings of claims in the application.

### **Listing of Claims:**

1-52. (Canceled)

53. (Currently Amended) A method for eliciting an immune response against an A/E pathogen, or component thereof, in a ruminant an animal comprising administering to the rumiant animal an effective amount of a composition comprising:

- i) an isolated [[a]] polypeptide which comprises an amino acid sequence having at least 75% sequence identity substantially identical to the sequence of SEQ ID NO: 24 SEQ ID NOs: 22-24 or an immunogenic [[a]] fragment or variant thereof, or
- ii) a nucleic acid molecule which comprises a nucleotide sequence substantially identical to the sequence of SEQ ID NOs: 1-3 or a fragment or variant thereof,
- iii) a nucleic acid molecule encoding a polypeptide which comprises an amino acid sequence substantially identical to the sequence of SEQ ID NOs: 22-24 or a fragment or variant thereof, or
- iv) a cell culture supernatant which comprises an isolated [[a]] polypeptide comprising an amino acid sequence having at least 75% sequence identity substantially identical to the sequence of SEQ ID NO: 24 SEQ ID NOs: 22-24, or an immunogenic [[a]] fragment or variant thereof,

thereby eliciting an immune response in the rumiant animal.

54. (Currently Amended) A method for reducing colonization of an A/E pathogen in a ruminant an animal, the method comprising administering to the rumiant animal an effective amount of a composition comprising:

- i) an isolated [[a]] polypeptide which comprises an amino acid sequence substantially identical having at least 75% sequence identity to SEQ ID NO: 24 the sequence of

~~SEQ ID NOS: 22-24, or an immunogenic [[a]] fragment or variant thereof, or~~

- ~~ii) a nucleic acid molecule which comprises a nucleotide sequence substantially identical to the sequence of SEQ ID NOS: 1-3 or a fragment or variant thereof,~~
- ~~iii) a nucleic acid molecule encoding a polypeptide which comprises an amino acid sequence substantially identical to the sequence of SEQ ID NOS: 22-24 or a fragment or variant thereof, or~~
- ~~iv) a cell culture supernatant which comprises an isolated [[a]] polypeptide comprising an amino acid sequence having at least 75% sequence identity substantially identical to SEQ ID NO: 24 the sequence of SEQ ID NOS: 22-24, or an immunogenic [[a]] fragment or variant thereof, thereby reducing colonization of the A/E pathogen in the ruminant animal.~~

55. (Currently Amended) A method for reducing shedding of an A/E pathogen in a ruminant animal comprising administering to the ruminant animal an effective amount of a composition comprising:

- ~~i) an isolated [[a]] polypeptide which comprises an amino acid sequence having at least 75% sequence identity substantially identical to SEQ ID NO: 24 the sequence of SEQ ID NOS: 22-24 or an immunogenic [[a]] fragment or variant thereof,~~
- ~~ii) a nucleic acid molecule which comprises a nucleotide sequence substantially identical to the sequence of SEQ ID NOS: 1-3 or a fragment or variant thereof,~~
- ~~iii) a nucleic acid molecule encoding a polypeptide which comprises an amino acid sequence substantially identical to the sequence of SEQ ID NOS: 22-24 or a fragment or variant thereof, or~~
- ~~iv) a cell culture supernatant which comprises an isolated [[a]] polypeptide comprising an amino acid sequence having at least 75% sequence identity substantially identical to SEQ ID NO: 24 the sequence of SEQ ID NOS: 22-24, or an immunogenic [[a]] fragment or variant thereof, thereby reducing shedding of the A/E pathogen in the ruminant animal.~~

56. (Currently Amended) The method of claim 53, wherein the animal is a ruminant is a bovine or ovine subject.

57. (Currently Amended) The method of claim 56 54, wherein the ruminant is a bovine or ovine subject.

58. (Currently Amended) The method of claim 53 55, wherein the ruminant is a bovine or ovine subject animal is a human.

59-70. (Canceled)

71. (Previously Presented) The method of claim 53, wherein the A/E pathogen is enterohemorrhagic *E. coli* (EHEC), enteropathogenic *E. coli* (EPEC), or *Citrobacter rodentium*.

72. (Original) The method of claim 71 wherein the EHEC is EHEC O157:H7 or EHEC O157:NM.

73. (Original) The method of claim 71 wherein the EPEC is EPEC 0127:H6.

74-85. (Canceled)

86. (Previously Presented) The method of claim 53, wherein the composition is provided in combination with a physiologically acceptable carrier.

87. (Previously Presented) The method of claim 53, wherein the polypeptide comprises 20% of the cell protein present in the composition.

88. (Currently Amended) The method of claim 53, wherein the composition further comprises a EspA, EspB, EspD, EspP, Tir, ~~Shiga toxin 1, Shiga toxin 2, or an~~ intimin polypeptide.

89. (Previously Presented) The method of claim 53, wherein the composition further comprises an adjuvant.

90. (Currently Amended) The method of claim 53 54, ~~further comprising treating or preventing infection by the A/E pathogen wherein the A/E pathogen is enterohemorrhagic *E. coli* (EHEC), enteropathogenic *E. coli* (EPEC), or *Citrobacter rodentium*.~~

91. (Currently Amended) The method of claim 54, wherein the ~~animal is a ruminant~~ EHEC is EHEC O157:H7 or EHEC O157:NM.

92. (Currently Amended) The method of claim 55 54, wherein the ~~animal is a ruminant~~ composition further comprises an adjuvant.

93. (Currently Amended) The method of claim 54 55, wherein the ~~animal is a human A/E pathogen is enterohemorrhagic *E. coli* (EHEC), enteropathogenic *E. coli* (EPEC), or *Citrobacter rodentium*.~~

94. (Currently Amended) The method of claim 55, wherein the ~~animal is a human~~ EHEC is EHEC O157:H7 or EHEC O157:NM.

95. (New) The method of claim 55, wherein the composition further comprises an adjuvant.